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Report of the Committee of Experts on Environmental-Economic Accounting

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its forty-first session (see E/2010/24, chap. I.A), the Secretary-General has the honour to transmit the report of the Committee of Experts on Environmental-Economic Accounting. The report elaborates on the progress of work of the Committee of Experts, in particular with regard to the project on the revision of the System of Environmental-Economic Accounting (SEEA). It describes the process leading to a set of recommendations for the issues in the issue list for volume 1 of the revised SEEA, expected to be submitted to the Commission at its forty-third session in 2012 for adoption as an international statistical standard. It also provides an update on the progress of work on establishing a road map, including a list of issues, for volume 2, and reports on the discussion on the scope and content of volume 3. The report also describes the activities of the Committee in the promotion of SEEA, as well as coordination activities. Points for discussion are provided in paragraph 63 of the present report.

* E/CN.3/2011/1.

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Report of the Committee of Experts on Environmental-Economic Accounting

I. Introduction

1. At its forty-first session, the Statistical Commission:

(a) Welcomed the report of the Committee of Experts on Environmental-Economic Accounting, expressed its appreciation for the progress of the work carried out by the Committee and thanked the Chair of the Committee for the leadership demonstrated;

(b) Expressed its appreciation for the methods of work of the Committee of Experts, in particular with regard to the broad consultation undertaken with regard to the mandate, governance and programme of work of the Committee;

(c) Agreed with the mandate and governance of the Committee of Experts;

(d) Noted with appreciation the highest priority being given to the timely revision of the System of Environmental-Economic Accounting (SEEA) in the Committee work programme, and urged the Committee to prioritize work for the completion of volume 1;

(e) Expressed its appreciation for the progress of the work of the London Group on Environmental Accounting in resolving expediently the majority of the issues on the issue list for volume 1 of the revised SEEA; and thanked the Group and its Chair for that achievement;

(f) Expressed appreciation to Member States and international and supranational organizations for their financial and in kind contributions to the revision of SEEA;

(g) Urged the Committee of Experts to closely consult with the various relevant entities and groups, including the secretariat of the United Nations Framework Convention on Climate Change, in the course of its work;

(h) Welcomed the role played by the Committee of Experts in coordinating its programme of work with various city groups, technical expert groups and intergovernmental organizations working in the areas of environmental-economic accounting and supporting statistics, in order to avoid duplication;

(i) Adopted part I of the international recommendations for water statistics, endorsed part II as supplementary guidance and encouraged the implementation of the recommendations in countries;

(j) Requested that the international recommendations for water statistics be translated into the official languages of the United Nations as quickly as possible.

2. The present report is organized as follows: section II summarizes the progress of work of the Committee, in particular on the SEEA revision. Section III provides an update on the progress of work in the preparation of the subsystem SEEA for Energy (SEEA-Energy). Section IV reports on the promotion of SEEA. Section V reports on the activities of groups working within the Committee mandate on the development of relevant environment, energy and other statistics that support

environmental-economic accounting. Section VI presents the points for discussion for the Commission.

II. Revision of SEEA

3. At its thirty-eighth session, the Statistical Commission stressed the importance of the work of the Committee in elevating the level of the *Handbook of National Accounting: Integrated Environmental-Economic Accounting 2003* to that of an international statistical standard based on an agreed issues list. At its fortieth and forty-first sessions the Commission reconfirmed that the revision of SEEA is the highest priority of the work programme of the Committee, and urged the Committee to carry out the work on volume 1, the statistical standard, according to the plan and governance outlined in the project management framework submitted as a background document to the fortieth session of the Statistical Commission.

4. The revision process is on track. A trust fund held at the United Nations Statistics Division and managed by the Bureau of the Committee has been established, which includes contributions from countries, and international and supranational organizations.

5. The editor of the revised SEEA, Carl Obst, was appointed in May 2010 by the Bureau of the Committee under delegated authority by the Committee. He was selected from among several candidates that responded to a worldwide call for applicants. He progressively drafts recommendations for change and clarification and prepares drafts of the text of the revised SEEA, according to the Project schedule; participates in technical discussions as needed; participates in the meetings of the Committee of Experts on Environmental-Economic Accounting and of its Bureau and editorial board, as well as in other technical meetings, as needed; consults with Chairs of city groups and other expert groups; provides oversight of the overall internal consistency of the revised SEEA and coherence with other macroeconomic statistical standards.

6. The editorial board was also appointed by the Bureau of the Committee of Experts in May 2010. It comprises experts in environmental-economic accounts and national accounts from Australia, Canada, the Netherlands, Norway, the Statistical Office of the European Commission (Eurostat), the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD) and the Statistical Division. It reviews the outcome papers being prepared by the various groups working on resolving the issues in the issue list; reviews the comments received through the global consultations; takes decisions on the final outcome papers outlining the recommendations on the list of issues; reviews draft chapters before they are submitted for global consultation; ensures internal consistency of the revised SEEA, in particular with regard to addressing the issues in the issue list; ensures that the comments received through the global consultation are taken into account; strives for consensus on controversial issues and advises the Bureau on issues that cannot be resolved.

7. As indicated in the project management framework, the revised SEEA will consist of three volumes, or three parts: volume 1, consisting of the international statistical standard that will stand alone in its own right; volume 2, consisting of topics on which consensus could not be reached but that are highly policy-relevant;

and volume 3, consisting of the applications of the accounts presented in volumes 1 and 2.

8. This section describes progress made on the three volumes.

Volume 1

9. A list of 21 issues for volume 1 was endorsed by the Statistical Commission and progress on the deliberations by the London Group on Environmental Accounting was reported to the Commission at its forty-first session in February 2010.

10. The work of the editor and the editorial board has focused on finalizing the recommendations on the 21 issues in the issue list. The process leading to the development of the recommendations involves:

(a) Finalizing the views of the London Group on each issue;

(b) Drafting outcome papers with associated recommendations for each issue;

(c) Posting of the outcome papers for global consultation with 30 to 45 days allowed for feedback;

(d) Summarizing feedback on the recommendations;

(e) Presenting recommendation for endorsement by the Statistical Commission upon recommendation by the Committee of Experts.

11. The 21 issues covered a broad range of topics requiring expertise from experts in various areas of statistics within and beyond national statistical offices. The Chair and the secretariat of the Committee of Experts sent a letter to countries requesting them to establish a coordination mechanism with the national statistical office playing an important role of contact for gathering feedback on the various issues.

12. To facilitate the consultation process within the countries and international agencies, issues have been grouped in batches covering topics that required certain expertise. Five batches of issues are being posted for global consultation. As at 30 November, four batches had been posted and the final batch will be posted on 10 December. Global consultation on the first two batches is complete and consultation on the third and fourth batches will be completed in December. Global consultation on the final batch of issues will close on 17 January.

13. The results of all global consultation will be summarized and considered by the editorial board and recommendations will be put forward to the Committee of Experts. Final recommendations will be sent for consideration to the Statistical Commission and will be presented as a background document accompanying this report.

14. The following table outlines the current status (as at 30 November 2010) regarding all 21 issues. The background document containing the recommendations proposed for the revised SEEA will also include a more up-to-date status report.

No.	SEEA revision issue	London Group consultation finalized	Outcome paper finalized and posted	Global consultation process complete	Recommendations finalized
1	Harmonization of material flow analysis with SEEA concepts	Yes	Due 10 December	Due 17 January	Due late January
2	Classification of physical flows	Yes	Due 10 December	Due 17 January	Due late January
3a	Bridging energy accounts and energy balances	Yes	Yes	Due 24 December	Due late January
3b	Boundary issues in air emission accounts	Yes	Yes	Due 24 December	Due late January
4	Renewable energy	Yes	Yes	Yes	Due early January
5	Environmental goods and services sector	Yes	Yes	Due 6 December	Due early January
6	Environmentally related taxes	Yes	Yes	Due 6 December	Due early January
7	Environmentally related subsidies	Yes	Yes	Due 6 December	Due early January
8	Emission permits	Yes	Due 10 December	Due 17 January	Due late January
9	Classification of natural resource use and management activities and expenditures	Yes	Yes	Due 6 December	Due early January
10	Classification of assets	Yes	Due 10 December	Due 17 January	Due late January
11	Categorization of mineral and energy resources	Yes	Yes	Due 24 December	Due late January
12	Valuation of assets: a case study on the valuation of fish stocks	Yes	Yes	Yes	Due early January
13	Recording depletion for non-renewable resources	Yes	Yes	Yes	Due early January
14	Recording depletion for renewable resources	Yes	Yes	Yes	Due early January
15a	Treatment of decommissioning costs	Yes	Yes	Yes	Due early January
15b	Recording the ownership of mineral-related assets	Yes	Yes	Yes	Due early January

No.	*SEEA revision issue*	*London Group consultation finalized*	*Outcome paper finalized and posted*	*Global consultation process complete*	*Recommendations finalized*
16	Treatment of water in artificial reservoirs	Yes	Due 10 December	Due 17 January	Due late January
17	Recording of losses	Yes	Yes	Due 24 December	Due late January
18	Valuation of water	Considered under other issues	NA	NA	NA
19	Land classifications	Yes	Due 10 December	Due 17 January	Due late January
20	Recording of soil and its valuation	Yes	Yes	Yes	Due early January
21	Forest accounts	Yes	Yes	Yes	Due early January

15. An outline for volume 1 of the revised SEEA has been determined that comprises six chapters. The drafting of these chapters will continue more actively in the first part of 2011. It is intended that global consultation on the draft chapters take place up to the summer of 2011. A final round of global consultation on the entire volume will take place in the fall of 2011. It is intended that volume 1 will be ready for adoption by the Statistical Commission at its forty-third session in February 2012. The draft outline of volume 1 is included in the annex to the present report.

Volume 2

16. While the work of the Committee of Experts has prioritized volume 1, it also discussed at its June meeting the way forward for developing volume 2. In particular, a subgroup of the Committee consisting of the World Bank, the European Environment Agency and the Statistics Division was established. It is in the process of developing a road map for volume 2, which will be first discussed by the Bureau and then presented to the Committee of Experts at its 6th meeting in June 2011. Plans for volume 2, which because of its nature will not be an international standard, will be reported to the Commission at its forty-third session in 2012.

Volume 3

17. Work is progressing on finalizing the purpose and structure of volume 3 of the revised SEEA. Volume 3 is intended to provide users and compilers with an understanding of how information in the SEEA framework can be used to undertake analysis and research on environmental issues in an economic context.

18. Discussion of the potential structure of volume 3 at the meeting of the Committee of Experts in June 2010 led to the formation of a subgroup of Committee members, who were asked to consider the following five issues:

(a) Focus of volume 3;

(b) Structure and content of volume 3;

(c) Timing with target dates for progressive completion of content by February 2013;

(d) Status of volume 3 in relation to SEEA as an international standard;

(e) Process for the endorsement of volume 3.

19. The subgroup was asked to provide recommendations to the Bureau of the Committee in early 2011, with final recommendations for discussion and endorsement at the meeting of the Committee of Experts in June 2011. These plans will be reported to the Statistical Commission in 2012.

20. As part of the process of developing the recommendations, the subgroup presented a paper to the meeting of the London Group held in October in Santiago. The discussion focused on issues (a), (b) and (c) mentioned above, and provided valuable input to the subgroup in terms of the target audience, style, tone and content for volume 3. It has been generally agreed that volume 3 will focus on the application of SEEA and will not have the status of an international standard.

III. Progress in the drafting of the subsystem SEEA-Energy

21. The Committee acknowledged that the work of SEEA-Energy provided useful input in resolving the issues on energy in the issue list related to energy accounts for the revision of SEEA. It reiterated the importance of completing the drafting of SEEA-Energy, which was suspended owing to resource constraints, be resumed.

22. The Committee stressed the importance of ensuring that the international recommendations for energy statistics and SEEA-Energy are consistent, to the maximum extent possible. It also requested that a joint implementation programme for the international recommendations for energy statistics and SEEA-Energy be developed.

23. Work on SEEA-Energy has resumed with the financial assistance of the Federal Statistical Office of Germany. It is expected that a draft of SEEA-Energy will be discussed by an expert group meeting in the first quarter of 2011.

24. The Committee reiterated that SEEA-Energy will be a subsystem of SEEA and as such will be fully consistent with SEEA. It will provide further elaboration of the concepts, classifications and accounts related to energy already included in SEEA. It is expected that it will be presented to the Commission for adoption in 2012 as an international statistical standard.

IV. Promotion of SEEA

25. The Committee discussed at length the promotion of SEEA. It expressed concerns that the benefits of SEEA are not as well understood as other international statistical standards. Without this understanding, countries may be reluctant to make investments in environmental-economic accounting, which, in turn, may have

implications for the implementation of SEEA and its subsystems; e.g. SEEA for Water (SEEA-Water) and SEEA-Energy.

26. In addition to developing volume 3 of the revised SEEA, the Committee considered it important that the statistical community play an important promotion and advocacy role at the national and international levels to explain the benefits of SEEA.

27. In this context, the Committee is trying to ensure that SEEA is recognized as the monitoring and evaluation framework for various policy frameworks, including, for example, the green economy and the green growth project.

28. Furthermore, as part of the promotion, the Committee envisaged the preparation of "glossy" publications that would explain through country examples the benefit of SEEA to answer specific policy questions. Three glossy publications are under preparation: one on sustainable consumption and production is being prepared by the United Kingdom Department for Environment, Food and Rural Affairs, one on climate change is being prepared by Statistics Netherlands and one on water is being prepared by the Australian Bureau of Statistics, the World Water Assessment Programme and the Statistical Division.

29. The Conference of the International Association of Official Statistics on official statistics and the environment, held in Chile in October 2010, provided an excellent opportunity to promote SEEA within the international statistical community. One of the keynote presentations, made by the Chair of the Committee of Experts, demonstrated how SEEA provides a system's approach for informing environmental-economic policy. This presentation was well received. The Conference also included a number of other presentations directly relevant to SEEA.

V. Coordination

30. As mandated by the Statistical Commission, the Committee of Experts discussed the progress of activities carried out by city groups and other technical expert groups working within the mandate of the Committee of Experts. These include activities of the London Group on Environmental Accounting, the Oslo Group on Energy Statistics, the Intersecretariat Working Group on Environment Statistics, the OECD/Eurostat task force on emission permits in the national accounts and the work of Eurostat, OECD and the Economic Commission for Europe related to the work programme of the Committee. In addition to the above-mentioned groups, the Committee has followed with interest several relevant initiatives under way in Europe.

1. London Group on Environmental Accounting

31. The London Group on Environmental Accounting met from 25 to 28 October 2010, in Santiago, to discuss several issues in the issue list for the SEEA revision. A few issues concerned finalizing the recommendations for the statistical standard, volume 1. Others dealt with the editorial aspects of this volume, such as the annotated outline of volume 1 and the list of tables. The London Group also discussed, in the context of volume 2, the development of ecosystem and carbon accounts, as well as issues related to policy uses and the dissemination of SEEA (the so-called glossy publications).

2. Oslo Group on Energy Statistics[1]

32. The Oslo Group on Energy Statistics held its 5th meeting from 1 to 4 February to review the draft of the international recommendations for energy statistics. The meeting agreed on steps to be taken to complete the work on the international recommendations in 2010, with the aim of presenting them for adoption to the Statistical Commission at its forty-second session in 2011.

33. The drafting and preparation of the international recommendations for energy statistics has been the main focus of the Oslo Group during 2009 and 2010. A provisional draft of the recommendations was sent out for worldwide consultation in 2010. Overall there was strong support for the draft. Members of the Oslo Group were active participants in the process at meetings and through electronic discussions. Regular communication between the members of the Oslo Group was ensured by the Oslo Group website, which is administered by the secretariat of the Oslo Group at Statistics Norway. The website is a forum for discussion among members and has served as a support in the drafting process of the international recommendations.

34. The main activity of the Oslo Group in 2011 will be related to the drafting of chapters of the Energy Statistics Compilers Manual. The Manual is intended to assist energy statistics compilers in the implementation of the international recommendations for energy statistics and the forthcoming SEEA-Energy, and with other uses within the context of national accounts.

35. The 6th meeting of the Oslo Group will be held in Canberra, in May 2011, and will be hosted by the Australian Bureau of Statistics. It will be dedicated to formulating the issues to be addressed in the Energy Statistics Compilers Manual and the drafting of chapters. The meeting will also focus on cooperation with other groups, and on the collection of national and international best practices.

3. OECD work related to the work programme of the Committee of Experts

36. The work carried out by OECD relevant to the work programme of the Committee of Experts includes the following three areas: work on indicators to monitor progress towards green growth, work on material flows and resource productivity, and the review of the OECD state of the environment questionnaire.

37. At the OECD ministerial council meeting in May 2010, ministers supported an interim report on the OECD green growth strategy. The strategy, to be completed for the Ministerial meeting in 2011, has an analytical and policy component and features a report on green growth indicators to help monitor the transition towards green growth. For the purpose of developing indicators, green growth has been defined along two dimensions: (i) pursuing economic growth and development while minimizing pressures on the quality of the environment and on the use of natural resource; and (ii) harnessing the growth potential that arises from addressing environmental concerns. An important question that arises with the measurement of green growth is how to define and measure "growth". Moving towards green growth requires paying attention to the quality and composition of growth, as well as to the question of who ultimately benefits from growth: gross domestic product (GDP) is a less-than-perfect tracker of material well-being, let alone of other dimensions that

[1] See also E/CN.3/2011/9.

shape people's quality of life, such as health, social contacts or security; and the work on green growth indicators links up with the ongoing debate on the conceptual and empirical work to better measure quality of life.

38. The work on green growth indicators proceeds along five types of indicators: (i) the environmental efficiency of production; (ii) the environmental efficiency of consumption; (iii) the natural asset base of the economy; (iv) the environmental dimension of quality of life; and (v) society responses. The toolkit of indicators defined so far amounts to about 30 indicators to do justice to the various aspects of green growth and identifies a few "headline" indicators that should be representative of the main challenges associated with green growth and that would have the potential to raise high-level political attention. The work on green growth indicators has revealed many data gaps and sometimes heterogeneous concepts across countries. This shows the usefulness of a fully developed SEEA for common methodologies and monitoring growth. It is therefore expected that the need to implement SEEA will be one of the conclusions on measurement arising from the report.

39. The work on material flows and resource productivity is undertaken in response to the recommendations of the OECD Council on material flows and resource productivity (April 2004 and March 2008). In 2010 and 2011, particular attention has and will be given to the further development of the information base and of related indicators, and to the preparation of a fact-based report on material flows and resource productivity in OECD countries and beyond.

40. The review of the OECD state of the environment questionnaire, in close cooperation with Eurostat, the United Nations Statistics Division, the United Nations Environment Programme (UNEP) and the Intersecretariat Working Group on Environment Statistics was launched in 2009. It takes into account recent developments in the field of environment statistics and environmental accounting. A restructured and updated set of questionnaire sections will be available in 2012.

4. Eurostat work related to the work programme of the Committee of Experts

41. In the context of the Stiglitz report[2] and the European Commission communication entitled "GDP and beyond: measuring progress in a changing world", research was initiated to consider information required for the production of more relevant indicators of economic performance and social progress, assess the feasibility of alternative measurement tools and discuss how to present this information in an appropriate way. In the following paragraphs the initiatives by OECD and Eurostat are listed.

42. Eurostat and the National Institute of Statistics and Economic Studies of France (INSEE) have put in place a sponsorship group on measuring progress, well-being and sustainable development. The work is organized within three task forces on the following themes: (i) households' perspective and distributional aspects of income, consumption and wealth; (ii) environmental sustainability; and (iii) multidimensional measures of quality of life. A fourth task force on cross-cutting issues will develop a common frame of reference for the work on indicators of the three thematic task forces.

[2] See also E/CN.3/2011/35.

43. Most relevant to the Committee activity is the second task force which is currently developing a set of recommendations to be followed when setting up a list of indicators to measure environmental well-being and sustainability. The recommendations will stress in particular the importance of choosing, whenever possible, indicators derived from an accounting framework. It will therefore encourage the gradual development of environmental accounts based on SEEA.

44. The sponsorship group is expected to provide priorities, sources, and legislation proposals for European Union countries, and guidance on how to reorganize production of statistics. The next meeting of the sponsorship group is planned for the second half of 2011, after the delivery of the reports by the task forces. A final report of the sponsorship group is expected at the end of 2011.

5. Intersecretariat Working Group on Environment Statistics

45. The Intersecretariat Working Group on Environment Statistics handled a lot of coordination issues in international data collections, with special reference to geographical coverage by the different organizations to avoid duplication of data collection from countries. This has become more challenging since OECD and Eurostat widened the scope of their data collections beyond their member States (candidate, accession, partner, neighbour country programmes). As the depths of the data collections differ from one group of countries to the other, duplication cases have to be resolved on a one-by-one basis requiring continuous coordination and agreements on data sharing.

46. There will be a major revision of the OECD/Eurostat joint questionnaire in the period 2010-2012 that has to be coordinated with the Statistical Division and UNEP to ensure the compatibility of the questionnaires. The process will take into account recent developments in the field of environment statistics and environmental-economic accounting.

47. Work on the joint glossary is ongoing, with a focus on terms related to water (taking into account the international recommendations for water statistics) and waste statistics used in the international questionnaires. Further harmonization of terms and definitions will be part of the 2010-2012 questionnaire revision process.

48. Recognizing their increasing activity in environment statistics and the related need for coordination, the Intersecretariat Working Group on Environment Statistics co-opted the Economic and Social Commission for Western Asia and the Economic Commission for Latin America and the Caribbean as its regular members and invited the European Environment Agency to join the group.

49. In view of the increasing tasks and growing membership of the Intersecretariat Working Group on Environment Statistics, the members recommended holding annual two-day Intersecretariat Working Group meetings, with the venue to be rotated among the member organizations' headquarters, instead of the back-to-back half- or one-day meetings that usually focus on European events.

6. OECD/Eurostat task force on emission permits in the national accounts

50. One of the issues in the issue list for the revised SEEA is the recording of emission permits. In this regard, the decision on the recording of emission permits in the System of National Accounts is of high relevance for the SEEA revision.

51. The 2008 System of National Accounts does not fully address the recording of tradable emission permits. The Advisory Expert Group on National Accounts, at its most recent meeting in November 2008, discussed the issue and recommended forming a task force to consider the treatment of emission allowances and permits in the national accounts. The task force was established by OECD and Eurostat under the auspices of the Intersecretariat Working Group on National Accounts.

52. The task force took as its starting point the 2008 System of National Accounts and the results of the discussion at the Advisory Expert Group on National Accounts. The 2008 System of National Accounts recommends that payments for permits relating to emission into the atmosphere should be recorded as taxes at the time payments are made, and that the market value of the permits be recorded as non-produced non-financial assets. The task force made considerable progress in understanding the operation of cap and trade schemes, although it has also considered other types of permits, and in articulating their recording in the accounts of the 2008 System of National Accounts under various alternatives.

53. The task force considered two alternatives in particular. Both treat the payments for permits as taxes, but propose that the taxes should be recorded on an accrual basis at the time that the emission occurs and paid by the emitters as taxes on production. However, they differ in two respects: (a) the value of the taxes; and (b) the type of assets involved. The first alternative proposes that the prepayment of tax (the timing difference between cash received by government for the permits and the time of the emission) gives rise to accounts receivable and payable and the difference between the prepayment of tax and the market price of permits represents a marketable contract (a non-produced non-financial asset) for the holder. The second alternative proposes that the emission permits represent a financial asset (for the holder) and a liability (for the issuer) valued at market price and that taxes are recorded at the market price of permits at the time that emissions take place. The task force could not reach consensus on which of the two alternatives should be recommended.

54. All members of the task force recognized the importance of resolving the issue. As such, the issue has been deferred to the Intersecretariat Working Group on National Accounts, which has been asked to recommend one of the alternatives described above. The Working Group was due to make its decision after the finalization of the present report. As the proposals of the task force are regarded as a clarification issue, the decision of the Working Group will be published in "SNA News and Notes" according to the update procedures adopted by the Commission.

7. Joint Economic Commission for Europe/Eurostat/OECD task force on measuring sustainable development

55. The joint ECE/Eurostat/OECD task force on measuring sustainable development established by the Conference of European Statisticians has been working to further advance the conceptual framework based on the capital approach, in particular in areas like human and social capital. The task force decided to broaden the conceptual work to present the distributional aspects of sustainable development or the measurement of current well-being. The task force follows up

on work done by a previous task force on developing a sustainable development framework based on the capital approach, which was published in 2009.[3]

56. The work has progressed in several directions. The task force prepared a draft report that highlights the importance of both the present and the future aspects of welfare. In terms of measurement, this led to the proposal to also include indicators on the quality of life, in order to take into account the needs of the present generations. The task force plans to finalize its report in 2011.

57. The work of the task force is strongly linked to the work undertaken by other institutions, such as the most recent recommendations contained in the report issued by the Stiglitz Commission, the European Commission initiative "GDP and Beyond", and the Global Project on Measuring the Progress of Societies. The task force follows closely the work of the sponsorship group on measuring progress of societies initiated by Eurostat and INSEE.

8. Economic Commission for Europe intersectoral task force on environmental indicators

58. A task force on environmental indicators established in 2009 by two ECE sectoral committees (Committee on Environmental Policy and Conference of European Statisticians) continued its work towards improving data production and to promote comparability of environmental statistics in the countries of Eastern Europe and Central Asia. Environmental indicators in key areas such as clean air, energy, drinking water, waste, forest biodiversity, sustainable transport, etc. were reviewed and experiences exchanged. The Statistical Division was actively involved in the work of the task force by providing financial support and expert knowledge.

59. During the three meetings held in the period 2009-2010, the task force reviewed more than half of the 36 indicators recommended by the guidelines for the application of environmental indicators in Eastern Europe, Caucasus and Central Asia (indicator guidelines), which were endorsed at the ministerial conference held on the theme "Environment for Europe" in 2007. The task force also considered indicators that are important but are currently not included in the indicator guidelines; namely, an indicator on environmental expenditures, agri-environmental indicators and energy and environment indicators. In November 2010, the Committee on Environmental Policy and the Bureau of the Conference of European Statisticians extended the mandate of the task force for two more years. The work will continue in 2011 to review the rest of the indicators.

9. Activities on climate change statistics of the Economic Commission for Europe

60. The Bureau of the Conference of European Statisticians asked the secretariat of ECE to undertake a survey among the members of the Conference of European Statisticians to explore the degree to which national statistical offices are involved in climate change-related work and to identify countries' needs to be addressed at the international level. For this purpose, the secretariat prepared a questionnaire in consultation with experts from Statistics Norway, Statistics Finland, Eurostat and the European Environment Agency. The questionnaire was endorsed by the Bureau of the Conference of European Statisticians in November 2010.

[3] See http://www.unece.org/stats/publications/Measuring_sustainable_development.pdf.

61. The questionnaire consists of three parts:

(a) Greenhouse gas emissions: focuses on the involvement of national statistical offices in producing data for emission inventories;

(b) Climate change indicators: deals with indicators measuring the impact of climate change;

(c) General questions: includes questions about concerns, priorities, future plans, etc.

62. The survey will be carried out in close collaboration with Eurostat and in coordination with the Statistical Division. The Committee of Experts expressed support for the work and asked ECE to report on the outcome of the survey at its next meeting in June 2011. The Committee of Experts and the Statistical Division also asked the ECE secretariat to extend the survey to a few more countries outside the Conference of European Statisticians in order to ensure more global coverage. The ECE secretariat will proceed with the survey in 2011.

VI. Points for discussion

63. **The Commission may wish to:**

(a) **Review and endorse the recommendations on the issues of volume 1 of the forthcoming SEEA revision;**

(b) **Express its views on the progress of work of the Committee.**

Annex

Working outline: SEEA, volume I

Foreword/preface

Acknowledgements

Chapter 1 Introduction

1.1 What is the System of Environmental and Economic Accounts?

1.2 Policy relevance and uses of SEEA

1.3 Conceptual elements of SEEA

A broad overview of the key elements, terminology and boundaries of the System

1.4 Key features of the System

1.4.1 SEEA as a framework for organizing statistics

1.4.2 Combining accounts in physical and monetary terms

1.4.3 Flexibility in implementation

1.4.4 Approaches to dissemination and reporting

1.5 Relationship of SEEA to other statistical standards

1.5.1 Linkages between SEEA and 2008 SNA

1.5.2 Linkages between SEEA and subsystems of SEEA

(e.g., SEEA-Water, SEEA-Energy)

1.5.3 The relationship to other standards for environmental statistics

(e.g., international recommendations for energy statistics, international recommendations for water statistics)

1.5.4 The relationship to standard international classifications
(e.g., Central Product Classification (CPC), International Standard Industrial Classifications of All Economic Activities (ISIC))

1.6 Structure of the SEEA manual — a reader's guide

1.6.1 Role of volumes I, II and III

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1.6.3 Chapter 3: Physical flow accounts

1.6.4 Chapter 4: Monetary flow accounts

1.6.5 Chapter 5: Asset accounts

1.6.6 Chapter 6: Summarizing and integrating the accounts

Chapter 2 Accounting structure and concepts

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2.2 Accounting concepts

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Physical flows

Materials (natural materials, products, residuals)

Water

Energy

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Depletion and degradation

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Introduction to depreciation, depletion and degradation

2.3 Accounting rules and assumptions

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2.3.2 Units of measurement

2.3.3 Residence and national territory

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Monetary terms

2.3.5 Basic, producer and purchaser's prices

2.3.6 Timing of valuation (end of period pricing/average period pricing)

2.4 Accounting units

2.4.1 Economic units

Sectors (e.g., corporations, households, general government)

Industries

2.4.2 Environmental units

Ecosystems

2.5 Accounting boundaries

This section needs to clarify the boundaries for SEEA as a whole manual, the differences between boundaries for volumes 1 and 2 and the distinctions where relevant between SEEA and SNA asset and production boundaries.

2.5.1 Boundary between the environment and the economy

2.5.2 Production boundary

2.5.3 Asset boundary

2.5.4 Geographical boundaries

2.6 SEEA classifications

This section should introduce the range of different classifications used in SEEA and related to SEEA. All detail should be discussed in the relevant chapter, in an annex or referenced in the relevant documentation relating to the particular classification. The use of bridge tables should be introduced here.

2.7 The connections between the SEEA accounts

2.7.1 Physical flow accounts

2.7.2 Monetary supply and use tables

2.7.3 Environmental expenditure accounts

2.7.4 Hybrid flow accounts

2.7.5 Asset accounts

2.8 SEEA aggregates and indicators

The intention in this section is to highlight that the accounting framework of SEEA contains a range of different totals, aggregates and indicators, etc. that can be useful for analysis and research. The detail regarding the different measures would be presented in relevant sections and this section should give only an overview. The section will clarify the use of terms such as aggregates and indicators that have been interpreted very differently. It is not intended to present any details on weighted indicators that do not emerge naturally from the accounting framework.

Aggregates and indicators from physical flow tables

Aggregates and indicators from monetary and hybrid accounts

Aggregates and indicators from environmentally adjusted SNA accounts

Chapter 3 Physical flow accounts

3.1 Introduction

3.2 Measurement framework for physical flows

3.2.1 Types of flows

Flows from the environment to the economy

Flows within the economy

Flows from the economy to the environment

3.2.2 Classifications of physical flows

Natural materials

Products

Residuals (including waste)

3.3 Principles of physical flow accounting

3.3.1 Introduction

3.3.2 Physical supply and use (SU) tables and input/output (IO) tables

3.4 Material flow accounts

3.4.1 Introduction

Covers flows of natural materials, products and residuals

3.4.2 Physical SU tables for materials

3.4.3 Classification and boundary issues

3.4.4 Accounting for losses

3.4.5 Aggregation and aggregates

3.4.6 Specific material flow accounts

3.4.6.1 Waste accounts

3.4.6.2 Air emission accounts

(links to energy flow accounts section 3.5)

3.4.6.3 Water emission accounts

(links to water flow accounts section 3.6)

3.4.7 Material flow analysis (MFA)

3.4.7.1 Basic principles of MFA

3.4.7.2 Types of MFA tables (e.g., economy wide, substance flow)

3.4.7.3 Classification and boundary issues

(e.g., application of the harvest approach)

3.4.7.4 Aggregation and aggregates

3.5 Energy flow accounts

3.5.1 Introduction

3.5.2 Physical SU table for energy resources

3.5.3 Physical SU table for energy products

3.5.4 Energy accounts

3.5.5 Classification and boundary issues

(e.g., treatment of renewable energy sources)

3.5.6 Accounting for losses

3.5.7 Aggregation and aggregates, including links to energy balances and links to SEEA-E

3.6 Water flow accounts

3.6.1 Introduction

3.6.2 Description of the hydrological cycle

3.6.3 Physical SU table for water

3.6.4 Water accounts

3.6.5 Classification and boundary issues

(e.g., treatment of waste water, return flows)

3.6.6 Accounting for losses

3.6.7 Aggregation and aggregates, including links to SEEA-W

Chapter 4 Monetary flow accounts

4.1 Introduction

Identifying flows within an SNA framework

Description of the functional approach to satellite accounts in SNA

4.2 Monetary supply and use tables

4.2.1 Basic principles

4.2.2 Monetary SU tables

4.2.3 Conceptual and boundary issues

(e.g., goods for processing, ancillary production)

4.2.4 Valuation issues

4.2.5 Aggregation and aggregates

4.3 Environmental activities in the economy

This section will discuss relevant definitions, classifications and tables following the various approaches to identifying environmental activities within SNA accounts.

4.3.1 Introduction

Purpose-based approaches to environmental accounting

The scope and definition of environmental activities

Environmental protection, resource management and use, minimization of natural hazards

Classifications of environmental activities

Classification of Environmental Protection Activities (CEPA), Classification of Resource Management Activities (CReMA), Classification of Resources Use and Management Activities (CRUMA)

4.3.2 Environmental Goods and Services Sector (EGSS)

Environmental domains

Environmental protection

Resource management

Environmental output

4.3.3 Environmental Protection Expenditure

Basic principles

Classifications

Environmental Protection Expenditure Accounts (EPEA)

4.3.4 Natural resource use and management expenditure

Basic principles

Classifications

Resource use and management expenditure accounts (RUMEA)

4.4 Other environmentally related transactions

This section will define the relevant transactions within SNA, especially in the context of the sector accounts of SNA (e.g., general government accounts). Aggregates will be defined where relevant.

4.4.1 Environmentally related taxes

4.4.2 Environmentally related subsidies

(including current and capital transfers)

4.4.3 Environmentally related fees, charges, fines and penalties

4.4.4 Permits, allowances and other payments relating to emissions

(including tables recording emission permits and allowances)

4.4.5 Rent, royalties and other payments relating to use of resources

4.4.6 Costs of ownership transfers

4.4.7 Terminal and decommissioning costs

4.4.8 Depletion and other decreases in natural resources

4.4.9 Discoveries and other increases in natural resources

4.5 Reporting and key aggregates for environmental monetary transactions

Chapter 5 Asset accounts

5.1 Introduction

5.2 Asset boundary and classification (expanding from chap. 2)

5.2.1 Asset boundary

5.2.2 Classification of assets

5.3 Principles of asset accounting

5.3.1 Description of different valuation techniques

5.3.2 Estimating NPV of assets

Basic principles

Estimating resource rent (alternative approaches and decision criteria)

Applying discount rates

Rates of return on fixed assets

5.3.3 Measurement of depletion

5.3.4 Measurement of degradation

5.3.5 Revaluation and holding gains

5.4 Asset accounts for land

5.4.1 Asset characteristics

5.4.2 Classification and boundary issues

Land use and land cover

Surface water/Exclusive Economic Zone (EEZ)/High seas

5.4.3 Measuring opening and closing levels in physical terms

5.4.4 Measuring changes in asset levels in physical terms

5.4.5 Accounts for land changes in physical terms

5.4.6 Measuring opening and closing levels in monetary terms

5.4.7 Accounts for land in monetary terms

5.4.8 Special issues

Treatment of renewable energy sources

Accounting for split resource ownership

Permits to use land

5.5 Asset accounts for mineral and energy resources

5.5.1 Asset characteristics

5.5.2 Categorization, classification and boundary issues

United Nations Framework Classification for Fossil Energy and Mineral Resources and links to McKelvey Box

5.5.3 Measuring opening and closing levels in physical terms

5.5.4 Measuring changes in asset levels in physical terms

5.5.5 Asset accounts for mineral and energy resources in physical terms

5.5.6 Measuring opening and closing levels in monetary terms

5.5.7 Accounting for changes in asset levels

Depletion

Discoveries

Other changes in assets

5.5.8 Asset accounts for mineral and energy resources in monetary terms

5.5.9 Special issues

Treatment of renewable energy sources

Mineral exploration and extraction activity

Accounting for split resource ownership

Treatment of terminal and decommissioning costs

Permits to access resources and royalty flows

5.6 Asset accounts for water

5.6.1 Asset characteristics

5.6.2 Classification and boundary issues

Stocks of water resources

Transboundary water resources

5.6.3 Measuring opening and closing levels in physical terms

5.6.4 Accounting for changes in asset levels

5.6.5 Asset accounts for water in physical terms

5.6.6 Special issues

Valuation of water

Artificial reservoirs

Permits for water use and access to water

5.7 Asset accounts for forests

5.7.1 Asset characteristics

5.7.2 Classification and boundary issues

5.7.3 Measuring opening and closing levels in physical terms

5.7.4 Measuring changes in asset levels in physical terms

5.7.5 Asset accounts for forests in physical terms

5.7.6 Measuring opening and closing levels in monetary terms

5.7.7 Accounting for changes in asset levels

Depletion and natural growth

Other changes in assets

5.7.8 Asset accounts for forests in monetary terms

5.7.9 Special issues

Carbon sequestration and carbon accounting

Permits to access forest resources

5.8 Asset accounts for fish

5.8.1 Asset characteristics

5.8.2 Classification and boundary issues

5.8.3 Measuring opening and closing levels in physical terms

5.8.4 Measuring changes in asset levels in physical terms

5.8.5 Asset accounts for fish resources in physical terms

5.8.6 Measuring opening and closing levels in monetary terms

5.8.7 Accounting for changes in asset levels

Depletion and natural growth

Other changes in assets

5.8.8 Asset accounts for fish resources in monetary terms

5.8.9 Special issues

Quotas

5.9 Accounting for other biological resources

5.9.1 Asset characteristics

Covers livestock, other animals, crops and plant resources

5.9.2 Classification and boundary issues

5.9.3 Measuring opening and closing levels in physical terms

5.9.4 Measuring changes in asset levels in physical terms

5.9.5 Measuring opening and closing levels in monetary terms

5.9.6 Accounting for changes in asset levels

Depreciation of cultivated biological resources

Depletion of non-cultivated biological resources

Other changes in assets

5.10 Accounting for soil resources

5.10.1 Asset characteristics

5.10.2 Classification and boundary issues

Relationship to land

5.10.3 Measuring opening and closing levels in physical terms

5.10.4 Measuring changes in asset levels in physical terms

5.10.5 Measuring opening and closing levels in monetary terms

5.10.6 Accounting for changes in asset levels

Depletion and degradation

Other changes in assets

Chapter 6 Summarizing and integrating the accounts

6.1 Introduction

This section should provide the motivation for and benefits of merging of physical and monetary data and for compiling and analysing environmental information within an accounting framework.

6.2 Hybrid flow accounts and tables

6.2.1 Principles of hybrid accounts and tables

Assumptions, scope and limitations

Classification and boundary issues

Hybrid SU and IO tables

Values, quantities, volumes and prices

6.2.2 Common hybrid flow accounts and tables

This section should give a clear exposition of how hybrid flow accounts and tables can be constructed in several common areas. It should show the potential for expansion to include flows other than supply and use flows, especially emissions, depletion and consumption measures.

6.3 Environmental expenditure accounts

This section aims to provide the context for purpose-based environmental expenditure accounts (such as EPEA and RUMEA) within the broader field of environmental accounting. There are close links to the discussion of this topic in chapter 4.

6.4 Full sequence of SEEA monetary flow accounts

6.4.1 Introduction

The economic accounts in SNA are structured such that there are clear links between the various accounts and balancing items can be followed from one account to the next. Thus a sequence of economic accounts is formed in SNA. A comparable sequence can be formed for the monetary accounts of SEEA whereby links are made between production, income, transfers, capital and balance sheets. This chapter explains the full sequence of SEEA monetary accounts. Of particular interest is the derivation of aggregates of interest such as depletion adjusted operating surplus and GDP.

6.4.2 Standard sequence of accounts

Flow accounts

Accumulation accounts

Balance sheets

6.4.3 Aggregation and aggregates

Depletion adjusted GDP, etc.

6.5 Accounting for environmental disasters

6.5.1 Accounting for natural processes that impact on the economy (e.g., Iceland volcano, floods in Pakistan)

6.5.2 Accounting for man-made disasters that impact on the environment (e.g., British Petroleum oil spill)

6.6 Other analytical directions

Introduction to volume 3

United Nations E/CN.3/2011/8

Economic and Social Council

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Statistical Commission
Forty-second session
22-25 February 2011
Item 3 (e) of the provisional agenda*
Items for discussion and decision: energy statistics

Energy statistics

Report of the Secretary-General

Summary

The present report is submitted to the Statistical Commission in compliance with its request at its fortieth session (see E/2009/24, chap. I.A). The report describes the actions taken to implement the Commission's decision to revise the recommendations for energy statistics, provides an overview of the draft revised recommendations and outlines the implementation programme. The draft of the revised recommendations is before the Commission as a background document, entitled "International recommendations for energy statistics", for consideration and adoption. Points for discussion by the Commission are contained in paragraph 38 of the report.

* E/CN.3/2011/1

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I. Introduction

1. The Statistical Commission, at its thirty-seventh session (7-10 March 2006), adopted decision 37/108[1] in which it, inter alia, recommended the development of energy statistics as part of official statistics, supported the review of the United Nations manuals on energy statistics, and emphasized the urgent need for harmonization of energy definitions and compilation methodologies and for the development of international standards in energy statistics. This followed a programme review of energy statistics conducted by Statistics Norway and the recommendations of an ad hoc expert group on energy statistics (New York, 23-25 May 2005).

2. In the same decision the Statistical Commission approved the establishment of two complementary working groups to carry out the work: (a) the Oslo Group on Energy Statistics to contribute to the development of improved methods and international standards for national official energy statistics and, in particular, to review and contribute to the updating of the United Nations handbooks and manuals on energy statistics; and (b) the Intersecretariat Working Group on Energy Statistics to enhance international collaboration and coordination.

3. At its thirty-eighth session (27 February-2 March 2007) the Commission, in decision 38/115,[2] took note, inter alia, of the reports of the Oslo Group on Energy Statistics and the Intersecretariat Working Group on Energy Statistics.

4. The Statistical Commission, at its fortieth session (24-27 February 2009) in decision 40/103,[3] endorsed the United Nations Statistics Division strategy to prepare the international recommendations for energy statistics, and suggested that the preparation of the recommendations be considered a matter of high priority.

5. Section II of the present report describes activities carried out in response to the Commission's requests; section III provides an overview of the revised recommendations; section IV outlines the implementation programme; and section V contains points for discussion by the Commission.

II. Activities carried out in response to the decisions of the Commission

A. Revision of the international recommendations for energy statistics

6. The international recommendations for energy statistics (IRES) have been prepared by the United Nations Statistics Division in close cooperation with the Oslo Group on Energy Statistics and the Intersecretariat Working Group on Energy Statistics in accordance with the mandates given to them by the Statistical Commission in decision 37/108. Consultations with specific groups of experts took place during the revision process, such as the Committee of Experts on Environmental-Economic Accounting, the Expert Group on International Economic and Social Classifications and the London Group on Environmental Accounting.

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[1] *Official Records of the Economic and Social Council, 2006, Supplement No. 4* (E/2006/24), chap. I.C.

[2] Ibid., *2007, Supplement No. 4* (E/2007/24), chap. I.B.

[3] Ibid., *2009, Supplement No. 4* (E/2009/24), chap. I.B.

Worldwide consultation

7. A key element of the development of IRES was a worldwide consultation with countries, which was carried out in two stages. The first stage, conducted in May/June 2008, concerned the scope and content of the future recommendations. The provisional draft of IRES was prepared based on the results of the consultation.[4]

8. The second stage of the worldwide consultation on the provisional draft of IRES took place in July/August 2010 to ensure that countries' views were fully taken into account before its finalization. Some 95 responses were received from countries and organizations providing strong support for the provisional draft of IRES. A large number of detailed comments were received and they constituted an excellent basis for the final review of the provisional draft by the United Nations Statistics Division and the Expert Group on Energy Statistics.

Expert Group on Energy Statistics

9. To ensure the active involvement of experts from around the world during all steps of the revision process and to obtain their endorsement of the draft recommendations, the second meeting of the Expert Group on Energy Statistics took place from 2 to 5 November 2010 in New York. During the meeting the Group reviewed the provisional draft of IRES and the detailed comments received during the worldwide consultation and agreed on changes to the provisional draft. The Group endorsed the amended draft of IRES and recommended its submission to the Statistical Commission at its forty-second session in February 2011.

10. The final draft recommendations are contained in the background document entitled "International recommendations for energy statistics" which is submitted to the Commission for adoption. The Expert Group also endorsed the main elements of the implementation programme which are presented in section IV to the present report.

Consultation with other groups of experts

11. As part of the preparation of IRES, consultation and coordination with other groups of experts took place in order to avoid overlap of activities and to ensure consistency of concepts and methodologies. In particular, consultations with the London Group on Environmental Accounting and the Committee of Experts on Environmental-Economic Accounting were carried out on a regular basis to ensure coordination with the preparation and development of the System of Environmental and Economic Accounting for Energy, which is being developed by the United Nations Statistics Division in consultation with the London Group on Environmental Accounting and the Oslo Group on Energy Statistics under the auspices of the Committee of Experts on Environmental-Economic Accounting.

12. The development of a standard classification of energy products was a key element of the preparation of IRES. Thus, the Expert Group on International Economic and Social Classifications was consulted during its meeting held from 1 to 4 September 2009 and as part of the worldwide consultation in order to ensure that the principles and criteria of international standard classifications were

[4] See http://unstats.un.org/unsd/energy/ires/consultation.htm.

followed. The classification contained in the final draft of IRES takes into account the comments received from the Expert Group.

B. Ongoing activities in the energy statistics work programme of the United Nations Statistics Division

13. The annual collection of data on energy statistics continues to be an important element of the work of the Division. While data for most countries are collected directly by the Division, data for some groups of countries are obtained through data-sharing agreements with other organizations. The resulting information is published in two annual publications, the *Energy Statistics Yearbook* and the *Energy Balances and Electricity Profiles*.

14. The *Energy Statistics Yearbook* covers data on production, trade and consumption of energy (solids, liquids, gaseous fuels and electricity), as well as additional information, such as per capita consumption, graphs showing historical trends, and special tables on trade, renewables, waste, refinery capacity and selected energy resources. The *Yearbook* covers data from 224 countries and areas.

15. The *Energy Balances and Electricity Profiles* cover data on production, trade, conversion and consumption for each fuel used, as well as data on production, trade and consumption of electricity, net installed capacity and thermal power plant input. The *Energy Balances and Electricity Profiles* cover data from 190 countries.

16. Efforts are ongoing to harmonize questionnaires and data-collection procedures among the main agencies involved in collection of data on energy statistics for the above-mentioned publications.

17. In addition, the monthly collection of energy statistics continues to be carried out on a regular basis for both oil statistics, within the Joint Oil Data Initiative, and the production of selected energy products for the *Monthly Bulletin of Statistics*.

III. Overview of the revised international recommendations for energy statistics

18. The new international recommendations for energy statistics are the first recommendations that provide a coherent basis for the production of energy statistics in the context of all economic statistics, providing clear links to existing standards. The recommendations are for the first time aligned with approved guidelines for economic statistics, international economic classifications and data aggregation frameworks, while taking into account established practices in the field of energy statistics. In addition, they provide for the first time a set of internationally agreed and harmonized definitions of energy products.

19. To improve comparability and ease of use for data compilers, the international recommendations for energy statistics are aligned in structure and format with international recommendations already approved by the Statistical Commission in other statistical domains, notably the International Recommendations for Industrial Statistics and the International Recommendations for Distributive Trade Statistics. The recommendations also improve comparability by taking into account relevant methodological work in energy statistics, such as the *Energy Statistics Manual*

issued by the International Energy Agency of the Organization for Economic Cooperation and Development and the Statistical Office of the European Union (Eurostat), and the forthcoming System of Integrated Environmental-Economic Accounting.

20. The international recommendations for energy statistics provide data compilers for the first time with a complete set of recommendations covering all aspects of the statistical production process framework, thus covering a broad range of topics from basic concepts, definitions and classifications to data sources, data compilation strategies, energy balances, data quality and statistical dissemination. As such, they contain several elements not covered by the previous United Nations publications on energy statistics: *Concepts and Methods in Energy Statistics, with Special Reference to Energy Accounts and Balances: A Technical Report*;[5] *Energy Statistics: Definitions, Units of Measure and Conversion Factors*[6] and *Energy Statistics: A Manual for Developing Countries*.[7] The new elements contained in the international recommendations are described below.

21. *Energy statistics as part of official statistics*. The international recommendations for energy statistics have been developed to provide a firm foundation for the long-term development of official energy statistics based on the Fundamental Principles of Official Statistics[8] and contain guidance on the underlying concepts, definitions and classifications as well as on data compilation and data dissemination in the context of an integrated approach to economic statistics.

22. *An international standard classification and harmonized definitions of energy products*. Another issue in energy statistics recognized by the Statistical Commission was the lack of harmonized definitions and classifications for energy statistics. The international recommendations for energy statistics reflect the work on harmonized definitions carried out by the Intersecretariat Working Group on Energy Statistics and present the Standard International Energy Classification, which will provide guidance for the collection, compilation and dissemination of energy statistics and will facilitate the integration with other statistical domains. Correspondences with the Central Product Classification (CPC Ver. 2) and the Harmonized System (HS 2007) have been developed as part of the work on the Standard International Energy Classification.

23. *Statistical units and data items*. The international recommendations for energy statistics include recommendations on the statistical units for use in data-collection from both energy and non-energy industries. The reference list of data items for collection (together with their definitions) is provided to reflect the specificity of each energy product and to ensure international comparability of the compiled statistics.

24. *Data collection and compilation*. The international recommendations for energy statistics provide an overview of data sources (e.g., administrative data, surveys, etc.) and data collection and compilation methods relevant to energy

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[5] Statistical Papers, Series F, No. 29, 1982 (United Nations publication, Sales No. 82.XVII.13).

[6] Statistical Papers, Series F, No. 44, 1987 (United Nations publication, Sales No. E.86.XVII.21).

[7] Statistical Papers, Series F, No. 56, 1991 (United Nations publication, Sales No. 91.XVII.10).

[8] *Official Records of the Economic and Social Council, 1994, Supplement No. 9* (E/1994/29), para. 59.

statistics. Given the importance of the legal and institutional framework for the collection and compilation of energy statistics, recommendations are formulated to promote coordinated and efficient frameworks.

25. *Energy balances*. The international recommendations for energy statistics include recommendations on the general principles underpinning the compilation of energy balances. A template for the energy balance is presented in IRES in detailed and aggregated form as a reference.

26. *Data quality assurance and metadata*. The international recommendations for energy statistics describe the main dimensions of energy data quality and provides recommendations on how to set up a national energy data quality framework, including the development and use of indicators of quality and reporting on data quality and metadata.

27. *Dissemination*. Recommendations on the dissemination of energy statistics, in particular on how to address data confidentiality, release schedules and dissemination of metadata, are now included in IRES.

28. *Uses of basic energy statistics and energy balances in the compilation of energy accounts and other statistics*. In addition to concepts and definitions for energy statistics, the International Recommendations for Energy Statistics also list examples of the use of energy statistics and their data items. They present an explanation of the conceptual relationships between balances, on the one hand, and energy accounts of the System of Environmental-Economic Accounting, on the other, in order to assist both compilers and users of energy statistics. Examples of indicators relevant for energy statistics are also provided, as well as a reference to the importance of energy statistics for the calculation of greenhouse gas emissions.

IV. Future work

29. Based on the recommendations of the Expert Group on Energy Statistics, the United Nations Statistics Division, in coordination with other stakeholders in the area of energy statistics, will undertake initiatives to support countries in their efforts to produce comprehensive and comparable energy statistics and to promote energy statistics worldwide. As first steps in the implementation of the international recommendations, several activities are planned: (a) the preparation of the Energy Statistics Compilers Manual; (b) the conduct of regional workshops to familiarize countries with the new international recommendations for energy statistics; and (c) the development of a knowledge base on energy statistics that can be consulted by countries and other users of energy statistics.

30. The Division will also continue to carry out elements of its work programme as described in paragraphs 13-17 above and will work on improving the system of data collection and the dissemination of available data.

A. Preparation of the Energy Statistics Compilers Manual

31. A key element of the implementation of IRES is the preparation of the Energy Statistics Compilers Manual. It is expected that the Manual will contain further and more detailed explanations of the recommendations and provide practical guidance

for compilers by describing best practices applicable under different circumstances. It is expected that the Oslo Group on Energy Statistics plays a key role in the preparation of the Manual.

32. The Energy Statistics Compilers Manual is planned to be finalized by 2013. It is envisaged that the Manual will be periodically reviewed and updated to reflect the new methodological developments and keep data compilers abreast of new country practices. As part of the preparation of the Manual, country practices will be collected and made available through a knowledge-base platform. This platform will be in addition to the existing functions of the United Nations Statistics Division website.

B. Technical assistance

33. To assist countries in the implementation of IRES, the United Nations Statistics Division plans to develop a technical assistance programme in cooperation and coordination with the regional commissions and international and regional organizations. The Division's activities will mainly consist of regional workshops that will focus on the content of the new recommendations and practical issues of their implementation. It is envisaged that the technical assistance programme will cover all stages of the statistical production process from the institutional arrangements, data collection and data processing to data dissemination. Guidance on the compilation of the energy balances (and later on the energy accounts) is expected to be an integral part of the technical assistance programme.

34. These global and regional efforts, as well as additional direct country assistance, will be coordinated with international, regional and supranational agencies active in energy statistics.

35. In addition, the preparation of standard training modules for workshops and online materials is planned to assist countries in the compilation of the questionnaires, energy balances and energy accounts.

C. Data collection by the United Nations Statistics Division

36. Revisions to the United Nations Statistics Division's annual questionnaire on energy statistics are expected to reflect the updated recommendations covered in IRES. In addition, the Division is working towards the development of a joint questionnaire with the International Energy Agency and other relevant organizations in order to reduce response burden and facilitate data exchange.

37. As part of its regular data-collection activities, the Division will request and advocate the provision of data according to the new recommendations and will put increased emphasis on obtaining metadata. In addition, a careful review of the United Nations energy statistics database will take place in order to incorporate elements of the recommendations on dissemination contained in IRES.

V. Points for discussion

38. **The Commission is requested**:

(a) To review and adopt the International Recommendations for Energy Statistics (IRES);

(b) To endorse the main elements of the implementation programme, including the preparation of the Energy Statistics Compilers Manual and additional training material, as well as technical assistance to countries.

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Report of the Oslo Group on Energy Statistics

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its forty-first session (see E/2010/24, chap. I.A), the Secretary-General has the honour to transmit the report of the Oslo Group on Energy Statistics, which is presented to the Commission for information. The report describes the activities of the Oslo Group in 2009-2010, including the main findings of the fourth and fifth meetings, the contributions to the international recommendations for energy statistics and the future activities of the Group. The Commission is requested to take note of the report.

* E/CN.3/2011/1.

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Report of the Oslo Group on Energy Statistics

I. Background

1. The Oslo Group on Energy Statistics is a city group created by the Statistical Commission to address methodological issues related to energy statistics and contribute to improved international standards and improved methods for official energy statistics.

2. The Group was established in 2006 on the basis of the issues discussed in the report of the programme reviewer (Statistics Norway) on energy statistics (E/CN.3/2005/3), prepared for the thirty-sixth session of the Statistical Commission, and the recommendations of the ad hoc expert group on energy statistics convened in New York from 23 to 25 May 2005 (see E/CN.3/2005/10).

3. Part of the mandate of the Oslo Group is to review and contribute to the revision of the United Nations handbooks and manuals. In support of this revision process, the Intersecretariat Working Group on Energy Statistics was created with the objective of facilitating the institutional coordination among various organizations active in energy statistics.

4. The mandate of the Oslo Group is contained in annex I.

II. Activities of the Oslo Group in 2009 and 2010

A. Meetings of the Oslo Group

5. Information about the three first meetings of the Oslo Group can be found in the two previous reports of the Oslo Group to the Statistical Commission at its thirty-eighth (see E/CN.3/2007/20) and fortieth (see E/CN.3/2009/5) sessions.

6. The fourth meeting of the Oslo Group was held in Ottawa from 2 to 6 February 2009 and was hosted by Statistics Canada. The meeting focused on the drafting process for the international recommendations for energy statistics (IRES) and was extended from the normal three to five days to give adequate time for a discussion of principles for the content of IRES. After discussions on all the chapters of the draft IRES, countries and organizations volunteered to contribute to the drafting of the new manual.

7. The fifth meeting of the Oslo Group was held in Cork, Ireland, from 1 to 4 February 2010 and was co-hosted by the Central Statistical Office Ireland and Sustainable Energy Ireland. The meeting was dedicated to the review of the first draft of IRES which was prepared by the United Nations Statistics Division and drafting teams consisting of representatives of member countries, based on the work of the Group and taking into account the format and structure of other international recommendations approved by the Statistical Commission for other areas of basic economic statistics.

B. International recommendations for energy statistics

8. The main activities of the Oslo Group in 2009 and 2010 have been related to the revision of the United Nations manuals on energy statistics, continuing previous activities initiated in 2008. Drafting and preparation of IRES has been the main focus. A worldwide consultation was held on the provisional draft in mid-2010. Responses indicated overall strong support for the draft. Members of the Oslo Group took an active part in the process at meetings, as well as through electronic contributions and exchange of opinions.

III. Coordination with other Groups

9. Representatives of the London Group on Environmental Accounting have attended the meetings of the Oslo Group, and vice versa. The chairs of the two groups have worked together on coordination in order to prevent misunderstandings and duplications of work. Issues discussed by the London Group that are closely related to the work of the Oslo Group include assets and reserves; both groups focus on defining users' needs in terms of environmental and economic accounting related to energy statistics.

10. The Chair of the Oslo Group participates in the United Nations Committee of Experts on Environmental-Economic Accounting. The provisional draft of IRES was presented at the Committee's meeting in June 2010.

11. The Intersecretariat Working Group on Energy Statistics is working towards common definitions, units and conversion factors for energy for use by international organizations. The Working Group, together with the Oslo Group, has been a key content provider for IRES in accordance with the mandate given to it by the Statistical Commission. During 2009 and 2010 the Chair and secretariat of the Oslo Group attended the meetings of the Working Group.

12. The Chair of the Oslo Group also participated in several meetings of the Expert Group on Resource Classification, hosted by the Economic Commission for Europe.

IV. Future activities of the Oslo Group

A. Preparation of the Energy Statistics Compilers Manual

13. The main activity for the Oslo Group in 2011 will be related to the drafting of chapters of the Energy Statistics Compilers Manual. The Manual is intended to assist energy statistics compilers in the implementation of the international recommendations for energy statistics, the forthcoming System of Environmental-Economic Accounting for Energy and with other uses within the context of national accounts.

14. The focus of the Manual is on compilation and reporting of energy statistics, both nationally and internationally. It will contain descriptions of good country practices and additional technical information relevant to all the tasks that energy statistics managers and compilers normally perform, from legal and institutional settings and data collection from various sources to data compilation, assessment of

quality and dissemination. The Manual is planned to be a forward-looking document with respect to the development and implementation of the integrated approach to compilation of basic statistics, enabling countries to collect data once and use them many times for various purposes.

15. The practice on compilation of energy statistics is constantly evolving. Therefore, in addition to the publication of the Energy Statistics Compilers Manual in hard copy, an electronic version will be developed and periodically updated to reflect the new methodological developments, keep the compilers abreast of good country practices and channel any new technical information to them.

16. The Energy Statistics Compilers Manual is planned to be finalized by 2013.

B. Best practices

17. The identification and collection of national and international best practices are part of the Oslo Group's mandate. It is envisaged that several sections of the Energy Statistics Compilers Manual will describe good country practices. Those sections will elaborate on issues such as institutional arrangements, data compilation, construction of energy indicators, quality assurance programmes, etc.

18. The Manual will elaborate technical details and provide examples of good country practices for various stages of the data compilation process, including discussion of and guidance on what kinds of data sources can be used and how to make improvements in this area. How to better reflect energy statistics requirements in economic censuses, in regular programmes of enterprise/establishment surveys, in household surveys and mixed household-enterprise surveys will also be discussed.

19. A separate section is envisaged for the description of good country practices in the design and organization of statistical surveys dedicated to the collection of energy data. The issue of frequency of surveys will be illustrated by country examples.

20. The methods used in data validation and editing, imputation and estimation and their specificity in energy statistics will be described and necessary examples provided. The Manual will also contain examples of an integrated approach to the compilation of energy statistics in several countries. Good practices in the use of administrative data sources and merging such data with data received via statistical surveys will be described.

21. A template developed as a tool for the collection of best practices is accessible through the Oslo Group's website (http://og.ssb.no, registration required).

C. Sixth meeting of the Oslo Group

22. The sixth meeting of the Oslo Group will be held in Canberra in May 2011 and will be hosted by the Australian Bureau of Statistics. The meeting will be dedicated to the issues to be addressed in the Energy Statistics Compilers Manual and the drafting of chapters. The meeting will also focus on cooperation with other groups and on the collection of national and international best practices.

Annex I

Mandate of the Oslo Group on Energy Statistics

The Oslo Group on Energy Statistics is to address issues related to energy statistics and contribute to improved international standards and improved methods for official energy statistics by pooling expertise in the energy community.

Actions:

- To identify users' needs
- To define the scope of official energy statistics
- To identify and collect national and international best practices
- To review and contribute to the updating of United Nations handbooks and manuals on energy statistics
- To identify gaps in coverage (e.g. fuel types, flows) and to develop methodologies to cover gaps
- To adopt links or develop bridges to international standard concepts and classifications in economic/environment statistics to facilitate the integration and interface of energy statistics with other statistical systems
- To recommend a core set of tables as minimum requirements at the national and international level to satisfy major user needs

Annex II

Members of the Oslo Group

A total of 23 countries or areas and 5 international organizations were represented at the meetings of the Oslo Group and expressed their interest in participating in the work of the Group.

Countries

Australia, Austria, Azerbaijan, Canada, China, Denmark, Egypt, Finland, France, Germany, Greenland, India, Ireland, Italy, Mexico, Netherlands, Norway, Poland, Russian Federation, South Africa, Sweden, United Kingdom of Great Britain and Northern Ireland, United States of America and Yemen.

Organizations

Statistical Office of the European Union (Eurostat), International Atomic Energy Agency, International Energy Agency, International Monetary Fund (statistical departments) and United Nations Statistical Division.

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Item 3 (f) of the provisional agenda*
Items for discussion and decision: integrated economic statistics

Report of the Friends of the Chair on integrated economic statistics

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its forty-first session (see E/2010/24, chap.I.A), the Secretary-General has the honour to transmit the report of the Friends of the Chair on integrated economic statistics. The report provides information on progress in the development of the draft guidelines on integrated economic statistics prepared at the request of the Commission at its thirty-ninth session. The draft guidelines are available as a separate background document. The Commission is requested to express its views on the draft guidelines and to provide advice on their finalization. Points for discussion are included in section IV of the report.

* E/CN.3/2011/1.

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Report of the Friends of the Chair on integrated economic statistics

I. Background

1. The idea of developing and achieving an integrated system of international statistics has a long history among national and international governing bodies of economic statistics. The motivating source of this work has been the benefits of integrated economic statistics for nationally and internationally coordinated economic policy in the interconnected global economy.

2. The Friends of the Chair on integrated economic statistics was first initiated at the thirty-seventh session of the Statistical Commission in 2006. The Commission endorsed the concept of an integrated approach to economic statistics and recommended its operational use in national economic programmes. It also recommended the establishment of a Friends of the Chair group to prepare a concept paper on the modalities of the integrated approach to economic statistics, including the feasibility of establishing a mechanism to improve coordination among international organizations and work groups engaged in economic statistics (see E/CN.3/2006/32).

3. At the thirty-ninth session of the Statistical Commission, the group presented its final report (see E/CN.3/2008/6) with the following conclusions:

(a) The integration of economic statistics is about statistical reconciliation; that is, ensuring that the messages that statistics deliver are consistent and coherent. Reconciliation covers primary economic statistics and macroeconomic accounts, short and long-term economic statistics, and national and international economic statistics. In essence, it involves dealing with conceptual, statistical production and institutional issues. Human resources issues (increasing the awareness of statistical agencies' staff concerning the impact of their work on the overall statistical system) and information technology issues (adopting common technology) also play a role and must be considered in that context;

(b) The integration of economic statistics is mainly driven by users' demand for data consistency and coherence;

(c) It is neither possible nor desirable to propagate one single and detailed implementing approach towards integrated economic statistics because national statistical systems are different. There are, however, some general guiding principles;

(d) Institutional arrangements at both the national and international levels are important for the management of integrated economic statistics and should be part of the corresponding reform programmes.

4. As reflected in the final report of the thirty-ninth session (E/2008/24), the Commission supported the conclusions of the Friends of the Chair (see E/CN.3/2008/6), in its decision 39/105, in which it:

(a) Affirmed the role of the System of National Accounts as the integrating framework in economic statistics, and recognized the importance of increasing the coherence of basic economic statistics for enhancing the quality and analytical value of both basic economic statistics and macroeconomic statistics;

(b) Agreed with the need to collect and disseminate case studies and develop other practical knowledge material to share experiences and guide countries in the process of implementing an integrated approach in their national statistical systems;

(c) Also agreed that there might be a need to develop a framework for establishing such guidelines, and recommended that such guidance of integration should focus, in particular, on practical aspects.

II. Work to date on the draft guidelines on integrated economic statistics

5. In addressing recommendations made in the report to the Statistical Commission (E/CN.3/2008/6), a second iteration of the Friends of the Chair group was formed in 2009 to take the lead in developing more extensive and practical guidelines along the lines recommended by the first group. The group is chaired by Steve Landefeld of the United States Bureau of Economic Analysis and its composition includes members from national and international organizations, currently comprising Statistics Canada, the National Institute of Statistics and Geography of Mexico (INEGI), Statistics Netherlands, Statistics New Zealand, Statistics South Africa, the International Monetary Fund, the European Central Bank, the Statistical Office of the European Communities (Eurostat), the Organization for Economic Cooperation and Development (OECD), the Statistical Division of the Economic Commission for Europe and the United Nations Statistical Division.

6. In December 2009, the second Friends of the Chair on integrated economic statistics group met in Washington, D.C., to formally discuss the draft chapters submitted by members for group review. Lead authors in attendance at the meeting presented their draft chapters to the members of the group for discussion of consistency with the initial report and recommendations and further changes and clarification of outstanding issues. Additional drafts and comments contributed by Friends of the Chair members as a result of that meeting were incorporated into subsequent versions of the guidelines. Richard Walton of the European Central Bank, a member of the Friends of the Chair group, contributed as editor of the guidelines.

7. The draft now before the Statistical Commission is a full working draft of the guidelines on integrated economic statistics. It has been compiled and was released for global comments on 2 December 2010. The comments received in the consultation are summarized in a background document to be submitted to the Commission. The results of the global consultation, as well as further comments from the Statistical Commission and the Friends of the Chair group members, will be reflected in the final version of the guidelines. The executive summary of the guidelines is contained in the annex to the present report.

8. In addition, in November 2010, at the invitation of the Chair of the Conference of European statisticians, the Friends of the Chair on integrated economic statistics prepared a report on its activities and forthcoming guidelines. The report was a contribution to the in-depth review by the Bureau of the Conference of European Statisticians on issues relating to the use of secondary and mixed sources for official

statistics; it highlighted how various issues in the use of secondary and mixed data are addressed in the context of the guidelines for integrating economic statistics.

III. Overview of draft guidelines on integrated economic statistics

9. The draft guidelines have built carefully on the findings and conclusions of the first Friends of the Chair group. The starting point of the guidelines is the internationally accepted standards, including the System of National Accounts 2008, the Balance of Payments Manual, Sixth Edition (BPM 6), and other specialized guidelines ranging from the measurement of prices to the measurement of foreign direct investment.

10. The draft guidelines build on international standards manuals and their emphasis on policy-relevant data by describing principles and detailed practices for further increasing the consistency and coherence of economic data within countries, over time, and across countries. These principles relate to issues such as the central role of customers in designing strategic plans for integration and the reliance on international standards and economic theory as the organizing principles for integration of microdata and macrodata.

11. Special emphasis is put on the importance of user needs in achieving consistency and coherence. Both text and case study examples are used to help illustrate the importance of user needs in achieving integration. Understanding user needs will be important in helping countries target their scarce resources to those harmonization efforts with the largest returns from the perspective of users.

12. The draft guidelines focus on consistency and coherence in the full chain of economic statistics, from short-term indicators to national and international macroeconomic statistics that are based on these indicators.

13. The full set of relevant conceptual, production and institutional issues are addressed. These issues range from the use of consistent definitions, questionnaires, classifications and sample frames to the use of consistent concepts and balancing techniques in national accounts.

14. Processes that play an integral role in the statistical production process such as strategic planning, human resource management, information technology employment, data dissemination and communication are also utilized in formulating integration strategies and current existing examples are highlighted in the use of case studies.

15. The draft guidelines present general guiding principles, as well as practical advice for the reconciliation of economic statistics for the entire spectrum of statistical agencies, from those that could be described as highly centralized and able to control the entire production process to those that are decentralized and must try and harmonize a wide array of data collected by different agencies using differing collection methods.

16. The recommended practices vary across countries. Countries with centralized systems may be better positioned to achieve consistency through bottom-up practices, such as the development of common business, common definitions, and common surveys to assure consistency in the microdata used as inputs into national

accounts and other macrodata. Countries with a more decentralized system also need to work with various primary and secondary data suppliers to improve consistency, but they are likely to be better positioned to achieve consistency through "top-down" adjustment procedures to adjust input data to national accounts definitions and concepts, the use of common source data and methods, and the use of consistent balancing techniques.

17. While comprehensive and consistent source data are essential to developing accurate and reliable economic statistics, in practice the source data used will never meet all of these criteria. Source data may be generated directly to support the production of national economic accounts; however, much of the overall body of source data will likely be generated for other purposes such as tax collections, customs and border control, and financial regulation. The draft guidelines address ways in which the latter type of source data might be harmonized and further adjusted to support a fully integrated system of accounts.

IV. Points for discussion

18. **The Commission is requested to:**

(a) **Express its views on the draft guidelines and comment on the practical aspects and national experiences of integration provided as guidance to countries in the implementation of an integrated approach to economic statistics;**

(b) **Provide advice on priorities and main improvements needed for the finalization of the guidelines on the basis of the comments received in the global consultation.**

Annex

Guidelines on integrated economic statistics: executive summary

Chapter 1

Integrated economic statistics are comprehensive sets of statistics that use common concepts, definitions, estimation methods, and data sources to produce a consistent and harmonized picture of economic activity for policy, business, investor, household and other users of economic data.

1. In the last two decades, the international statistical system has made great progress in harmonizing economic statistics through internationally accepted guidelines, including the System of National Accounts 2008, the Balance of Payments Manual, Sixth Edition (BPM 6), and more specialized guidelines ranging from the measurement of prices to the measurement of foreign direct investment. The motivating source of this work has been the need for and the huge benefits of integrated economic statistics for internationally coordinated economic policy requirements in the interconnected global economy.

2. This volume builds on these guidelines and their emphasis on policy-relevant data by describing principles and detailed practices for integrated economic statistics. These principles relate to the consistency and coherence of economic data within countries, over time, and across countries and include the design of strategic plans for integration and the reliance on international guidelines and economic theory as the organizing principles for integration of micro and macro data.

3. The recommended practices vary across countries. Countries with centralized systems may be better positioned to achieve consistency through "bottom-up" practices such as the development of common business, common definitions, and common surveys to assure consistency in the microdata used as inputs into national accounts and other macrodata. Countries with more decentralized systems also need to work with data suppliers to improve consistency, but are likely to be better positioned to achieve consistency through "top-down" adjustment procedures to adjust input data to national accounts definitions and concepts, the use of common source data and methods, and the use of consistent balancing techniques.

4. **Chapter 2** discusses the benefits and principles of integrated economic statistics and the strategic planning processing for achieving integration. The chapter concludes with case studies on the benefits from integration from the United States and the Euro Area Accounts.

5. Macroeconomic accounts, as exemplified by national and balance of payments accounts, along with associated macro price and employment data, are the cornerstones of economic policy, business strategy, and investor and household expectations. These data are used by governments around the world to guide monetary and fiscal policy, develop tax, spending and budget plans, allocate taxes and grants and aid, develop tax incentives, direct trade and investment policies, and monitor and regulate financial markets and contribute to a wide range of other government policies. The macroeconomic data are also used by businesses and households, along with information about their own businesses, investments, and

personal finances, to develop the plans and expectations that form the basis for economic decisions.

6. To be useful to these users, macroeconomic data needs to be consistent with the constant stream of other economic indicators that comes to these users on a regular basis, including retail sales, construction spending, profits, employment, wages and salaries, and inflation. These statistics are important in their own right, and are used for many policy and business decisions, as well as inputs for macro statistics. Comprehensive integration begins with the organizing framework of the national accounts. Moreover, integration must also encompass harmonizing the economic indicators that form the foundation for the national accounts. Macroeconomic statistics also need to be integrated, coherent and consistent. National accounts were borne out of the Great Depression and developed as a consistent and comprehensive measure of economic activity for policymakers. The need for a consistent and integrated framework for users remains of great importance. The recent financial crisis is an important reminder of the need for integration, and in particular between the real and financial accounts.

7. These user needs for integrated and consistent economic data should remain the foundation for countries' plans for developing better integrated and relevant economic accounts and associated economic data. The central role of these users also underlines the importance of ensuring that better integrated accounts should be designed to be consistent with macroeconomic concepts and models, including macroeconomic growth, productivity, and forecasting models used by governments, business, investors and researchers.

8. The benefits of such integration not only accrue to users of the data. For countries able to redesign collection systems from the "bottom up", the use of common questionnaires, business lists, and definitions improve consistency and reduces respondent burden and statistical agency costs, allowing agencies to better direct their scarce resources to answering users' demands for updating and extending the accounts. Such integration in data collection also facilitates the introduction of consistent, automated edits and other best practices that reduce the likelihood of errors and improve accuracy, while at the same time increasing consistency. For countries more reliant on top-down procedures, the ability to share microdata and reconcile major differences in business lists, and the use of common concepts, definitions, classifications, source data, seasonal adjustments, balancing techniques, extrapolation and other methods can produce large gains in consistency, accuracy and efficiency.

9. The chapter emphasizes the importance of an integrated statistical system based on economic theory and points to the System of National Accounts (SNA) as a central tool for ensuring that economic statistics are conceptually consistent with economic theory. SNA also serves as a coordinating framework for economic statistics in at least two other ways. First, it serves as a conceptual framework for assuring the consistency of the definitions and classifications used in different, but related, fields of statistics. Second, it serves as an accounting framework for ensuring the numerical consistency of data drawn from different sources, such as business indicators, household surveys, merchandise trade, tax and other administrative data. The SNA's double-entry comprehensive framework is a powerful tool for integration, identifying gaps, harmonizing concepts and setting priorities. A former Under-Secretary of the United States Commerce Department

used to describe the national accounts as the "mine shaft canary of the decentralized U.S. statistical system", which can serve an important role in ensuring consistency and integration in both centralized and decentralized systems.

10. The guidelines on principles and practices from chapter 2 are the following:

- The integration of economic statistics should be mainly driven by users' needs for relevant, timely, consistent and coherent data;
- An integrated system of economic statistics should have a sound foundation in economic theory;
- National accounts, as exemplified by the harmonized System of National Accounts and the Balance of Payments manuals, should be the central organizing framework for integrated accounts, in ensuring consistency with economic theory, consistency in definitions and classifications and in identifying gaps and inconsistencies and setting priorities;
- User needs for the economic indicators that feed into macroeconomic statistics must also be taken into account;
- Integration should be consistent with the conceptual and theoretical models employed by users: macroeconomic forecasting, Total Factor Productivity, and EU KLEMS (EU level analysis of capital (K), labour (L), energy (E), materials (M) and service (S) inputs) models; and
- Outreach to users is essential in identifying the largest benefits to users and developing a strategic plan for integration.

11. The trade-offs between accuracy, timeliness, consistency, coherence, credibility and relevance have to be considered. Users should also be informed of the trade-offs between developing new macrodata series and opportunities for improving the consistency and level of detail in the existing data through common sample frames, definitions, data sharing, and other tools, and users need to be consulted about the scope of integration beyond macroeconomic statistics.

12. **Chapter 3** discusses the general guiding principles and building blocks of integrated economic statistics, ranging from integrated data collection systems and the use of harmonized international guidelines to the use of common source data, classifications, seasonal adjustment and other estimation methods, and cross-system coordination. The chapter goes on to discuss the role of national and balance of payments accounts in defining the scope of integration and provides references to United Nations and Economic Commission for Europe classification systems. The discussion also encompasses various strategies for achieving integration, including centralized data collections systems — with common business registers, questionnaires and classifications — and the use of common source data, balancing techniques, seasonal adjustment, extrapolation and other methods. The usefulness of these integration tools within centralized and decentralized systems is discussed. The chapter includes good practices in integrating economic statistics in case studies: including agriculture in the national statistical system, integrating monetary and financial statistics in the euro area financial accounts and the SNA 2008 update project.

13. Chapter 3 guidelines include:

- Countries should place a high priority on the goal of harmonized data collections. For highly centralized systems this may mean common business registers and common surveys. For more decentralized systems this may mean sharing microdata to resolve major inconsistencies across business registers, the use of consistent classification systems and common questions; and
- Countries should also place a high priority on the coordinated use of common source data, definitions, and methods across statistical units to achieve greater consistency and integration for users. Inconsistencies are often driven by historical decisions on source data and methods that are unrelated to accuracy in today's economy or current user needs. In these instances, large gains can be made in consistency through agreement on common definitions, seasonal adjustments, source data, extrapolation and other techniques.

14. **Chapter 4** discusses strategic issues for integrating economic statistics and provides references to more detailed materials, including those from the United Nations, the European Union, the Netherlands, New Zealand and the United Kingdom. The chapter emphasizes the need for the development of a set of principles and protocols for integrating statistics which specify the scope of integration and the means for achieving that integration. The adoption of a set of common principles on integration by statistical agencies in a decentralized system and by the functional departments in centralized systems is a key step in achieving integration. Successful implementation is more likely where there is support at the highest levels within and across statistical agencies and by user agencies.

15. The chapter provides a practical step-by-step guide for developing a strategic plan for integrating statistics. Special attention is paid to management culture and the need for flexibility in developing integration plans across different types of statistical systems. Useful tips are given regarding advisory committees, memorandums of understanding between users and producers, providing incentives for integration to producers of existing statistics, and initiating projects to demonstrate the feasibility and benefits of integration.

16. Chapter 4 guidelines include:

- Statistical agencies should work with users to develop a set of principles and protocols for integration;
- Enlisting high-level support by users and within the statistical system is critical to successful integration. Such support is important in obtaining resources, in developing priorities, and in providing incentives to individual statistical units for integration with other units;
- Integration goals and plans need to be integrated with existing strategic plans and balanced against other competing demands for resources, including quality standards, updating the statistics, and improving timeliness and relevance;
- Coordinating mechanisms should be evaluated and revised to reflect integration goals. Most countries do not have highly centralized statistical offices, although they do have mechanisms for coordination. Even countries with highly centralized systems should evaluate and revise their coordination mechanisms as appropriate to reflect integration goals and plans; and

- Incentives should be developed to help "sell" integration; monetary authorities, finance ministries and other key users can play an important role in this process.

17. **Chapter 5** presents the specific tools that countries can use for increasing consistency at each stage in the statistical production process of integrated economic statistics. The discussion and the New Zealand, Canada and Netherlands case studies in this chapter focus on the full range of management tools that can be used to achieve integration in centralized and decentralized systems. The guidelines for this chapter are more numerous and less generic, but the broader principles are as follows:

- Integration should address all stages of the production process from design of the collection system to the compilation and dissemination of data;
- Countries should, however, focus their efforts on those aspects of the process over which they have the most control and which will produce the biggest bang for the buck. Defining this focus will require balancing costs and benefits and will vary across statistical systems, centralized and decentralized; and
- Integration and change in statistical systems requires strong support and clearly defined leadership.

18. This chapter also describes the characteristics and requirements for integration in data collection and processing systems. This detailed chapter discusses understanding the impact of user needs on integrated data collections, the design of integrated data collections, the importance of common terminology and units of measurement, the definition of business units, the essential role of comprehensive and up-to-date business register, the design of questionnaires, integrating administrative with survey data, and tools for data processing and storage than increase integration and consistency.

19. Chapter 5 guidelines include:

National Statistical Offices should focus on four elements in developing their infrastructure and processing environment: consistency, coherence, breadth and depth:

- Consistency requires the use of common concepts, terminology, standards and defining statistical units uniformly;
- Coherence requires that interrelated data should be internally consistent;
- Integrated systems should provide sufficient overall coverage and level of detail to meet user needs for breadth and depth;
- A transparent process is required to evaluate the needs of users and to prioritize them in the statistical system. Priority settings should translate into a medium-term plan. This will assess the capacity to capture new information and to maintain the current statistical system. This will go a long way to explain the direction of the statistical system;
- A strong governance structure is fundamental to the design of an integrated statistical collection system. Adopting measures that will minimize conceptual, classification and statistical issues require a significant amount of coordination;

- National statistical offices should develop a common and comprehensive business register and a means of reconciling multiple business registers, to ensure that all entities can be identified and can be measured in an unduplicated way;

- The application of consistent classifications to appropriately defined statistical units is essential for the coherence of economic statistics;

- Integrated systems require the use of common concepts, definitions and classifications. This will ensure consistency in the content of questionnaires and of the statistics of all programmes of the statistical system;

- The use of administrative data should complement survey-taking activities. Relying exclusively on surveys to increase breadth and depth of the statistical system is costly and imposes a large burden on respondents;

- Clear arrangements should be put in place between the statistical office and administrative authorities, to ensure that statistical needs are considered in designing or changing administrative information collections in a coherent manner within the statistical system;

- Metadata are an important prerequisite in developing an integrated questionnaire/statistical system. The metadata will provide the necessary coherence between the various estimates and tools leading to the production of the statistical information. Metadata should cover concepts, variables and classifications, as well as quality;

- National Statistical Offices should put a high priority on developing a system relying on standardized statistical processes with the goal of making optimum use of statistical methodologies and information technology. The goal should be to develop generic tools to process the data and standard approaches to resolve issues at various stages of the production process, recognizing that it could take several years before the system reach a mature stage; and

- A flexible IT infrastructure is critical to adapting to changes in the economy, concepts, methods and information technology. This will help optimize operational integration, data coherence and consistency, as well as analytical capacity and knowledge retention.

20. **Chapter 6** describes how good practices and examples on communication demonstrate the practical utility and relevance of enhancing the story the statistics contain for a broad range of users that meets their analytical needs and enables conclusions to be drawn about the quality of the disseminated data. The production of integrated economic statistics is complemented with strong statistical dissemination practices. The IMF's data dissemination initiatives have provided some structure to enhance user capacity to evaluate the comparability of data across datasets within a single country and across countries. Building a nexus to the Statistical Data and Metadata Exchange (SDMX) initiative and providing capacity-building in countries to implement good dissemination practices should be an important part of a future agenda to make integrated economic statistics a reality. The central theme in constructing such an agenda is to keep the focus on users' needs, especially those users involved in economic analysis and policy work.

21. Chapter 6 guidelines include:

- An analytical quality framework will provide good dissemination practices for integrated economic statistics;
- Efficient access to and presentation of data and metadata;
- The use of SDMX to promote the sharing of statistical information; and
- Data warehouses can play an effective role in the integration of economic statistics.

22. **Chapter 7** introduces practical issues related to the compilation of an integrated set of accounts. It begins with national accounts and then discusses more focused accounts such as international accounts, industry accounts, sector accounts and financial accounts. Regional statistics — relevant for those countries that have well-defined sub-aggregates — are discussed. Finally, other accounts, including satellite accounts — which may be linked to the core accounts but incorporate alternative definitions and conventions — are also introduced. The discussion focuses on practical compilation problems that might arise during implementation and on potential solutions for both centralized and decentralized systems. Examples from the economic accounts of the Netherlands and the United States are provided.

23. Chapter 7 guidelines include:

- Integration is a desirable goal because it allows for comparisons within the various accounts and across accounts;
- In practice, source data is unlikely to satisfy all purposes and will need to be adjusted and harmonized to support a system of integrated accounts, and considerations should be made for the frequency and timeliness of source data;
- Input-output or supply and use tables may be used as the integration framework for economic statistics; input-output accounting may be used to benchmark the core national accounts;
- Industry accounts should be used to provide information about production and the goods and services produced; consistent industry and product classification systems are important;
- International accounts are an important part of any country's economic accounting with the rest of the world. International accounts should be harmonized with the domestic accounts — for both goods and services and financial flows and positions — and, to the extent possible, with the accounts of other countries. Bilateral comparisons, including those conducted under the auspices of IMF and OECD can be useful in this regard;
- Regional accounts may be used to provide a detailed view of geographically related portions of the economy. Related economic activity should be localized in an area that is appropriate, given the relative ease of labour and capital mobility; and
- Linkages between the core accounts and other accounts — such as labour accounts, monetary statistics and satellite accounts, that provide additional information on specific areas of interest or an alternative framework for analysing certain aspects of the economy — should be examined to encourage harmonization to the extent feasible.